

REMARKS

This Application has been carefully reviewed in light of the Office Action. Applicant appreciates the Examiner's consideration of the Application. In order to advance prosecution of this Application, Applicant has responded to each notation by the Examiner. Applicant respectfully requests reconsideration and favorable action in this case.

Section 112 Rejections

The Examiner rejects Claims 1 and 11 under 35 U.S.C. § 112, first paragraph, stating that the claims fail to comply with the enablement requirement. The Examiner further rejects Claims 1 and 11 under 35 U.S.C. § 112, second paragraph, stating that the claims are indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention. Applicant respectfully traverses these rejections. In order to advance prosecution, however, Applicant has amended Claims 1 and 11 to remove the elements "relational database" and "the 'out' table is unsearchable by a user," rendering these rejections moot. Accordingly, Applicant requests reconsideration and allowance of Claims 1 and 11.

Section 101 Rejection

The Examiner rejects Claims 1-5 and 11-12 under 35 U.S.C. § 101, stating that none of the claims are directed to statutory subject matter. Applicant respectfully traverses these rejections.

First, the Examiner rejects Claims 1 and 11, stating that the element "improving the operational performance of the database" is relative. Applicant respectfully traverses these rejections. In order to advance prosecution, however, Applicant has amended Claims 1 and 11 to remove the element "improving the operational performance of the database," rendering these rejections moot. Accordingly, Applicant requests reconsideration and allowance of Claims 1 and 11.

Second, the Examiner rejects Claim 11, stating that it is not clear what "a directory service arrangement" is, and that it is unclear whether it is a system or a method. Applicant respectfully traverses this rejection. In order to advance prosecution, however, Applicant has amended Claim 11 to remove the element "directory service arrangement," rendering this rejection moot. Accordingly, Applicant requests reconsideration and allowance of Claim 11.

Third, the Examiner recognizes that 35 U.S.C. § 101 is met at least when the claim produces a useful, concrete, and tangible result. The M.P.E.P. further clarifies that “[o]nly when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. 101.” M.P.E.P. § 2106. Indeed, a method or process remains statutory even if some or all of the steps therein can be performed in the human mind, with the aid of the human mind, or because it may be necessary for one performing the method or process to think. *See In re Musgrave*, 431 F.2d at 893, 167 U.S.P.Q. at 289. As stated by the Federal Circuit in *State Street* and as explicitly confirmed in the M.P.E.P., “[T]ransformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces ‘a useful, concrete, and tangible result’—a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.” *State Street*, 149 F.3d at 1373, 47 U.S.P.Q. 2d at 1601-02; M.P.E.P. § 2106.

Applicant respectfully submits that independent Claim 1 recites a useful, concrete, and tangible result. For example, independent Claim 1 clearly states “employing the instruction or operation to amend the information entry in the database system.” Just as the transformation of data into a final share price produced a useful, concrete, and tangible result in *State Street*, described above, amending the information entry in the database system also produces a useful, concrete, and tangible result.

For at least this reason, independent Claim 1 and its dependent claims are allowable under 35 U.S.C. § 101. For analogous reasons, independent Claim 11 and its dependent claim are allowable under 35 U.S.C. § 101. Accordingly, Applicant respectfully requests reconsideration and allowance of Claims 1-5 and 11-12.

Claim Amendments

Applicant has amended independent Claims 1 and 11 to recite “the ‘out’ table being non-visible to a search of the ‘in’ table.” The Specification supports this amendment. *See, e.g.*, Fig. 1 and the passages at Page 3, Lines 27-29, and Page 5, Lines 17-28.

Section 103(a) Rejections

The Examiner rejects Claims 1-5 and 11-12 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,085,188 to Bachmann et al. ("*Bachmann*") in view of U.S. Patent No. 6,347,312 to Byrne et al. ("*Byrne*"). Applicant respectfully traverses this rejection for the reasons discussed below.

Applicant respectfully submits that the combination of *Bachmann* and *Byrne* proposed by the Examiner fails to disclose, teach, or suggest elements specifically recited in Applicant's claims. For example, the *Bachmann-Byrne* combination proposed by the Examiner fails to disclose, teach, or suggest the following recited in amended independent Claim 1:

determining whether an instruction or operation adds an information entry to or removes the information entry from a database system, wherein for an add entry operation, the information entry is first added to an 'out' table, and wherein for a remove entry operation, the information entry is first removed from an 'in' table, the 'out' table being non-visible to a search of the 'in' table.

The Examiner concedes that *Bachmann* "explicitly does not teach the in and out tables" of independent Claim 1. (Office Action, Page 5.) As a result, the Examiner relies on Type I and Type II caches of *Byrne* to teach 'in' and 'out' tables of independent Claim 1. (Office Action, Page 5.) *Byrne*, however, discloses that whenever add or delete operations are performed, *it is necessary to remove* the modified unit from both the Type I and Type II caches:

According to the present invention, it is necessary to "invalidate" the cache during particular directory service operations (e.g., *modify, modify rdn, delete and add operations*) which would otherwise impact cached information. ...

The routine assumes that particular search results have been stored in the cache in response to a search query and that *the RDBMS contents are being modified prior to a repetitive query*. The routine begins at step 110 by locking the Type I cache. Step 112 is then repeated for each attribute name that is modified in the relational database. In particular, a test is performed at step 114 to determine if the attribute name is in the filter string of the filter key for the search query. If the outcome of the test at step 114 is positive, the routine continues at step 116 by *removing the cache unit (namely, the identifier list and the filter key)*. After all attribute names have been processed in this manner, the routine unlocks the Type I cache at step 118.

The routine then continues at step 120 to lock the Type II cache. A test is then performed at step 122 to determine if the identifier of the modified entry is in the Type II cache. If the outcome of the test at step 122 is positive, the routine continues at step 124 to **remove the unit (namely, the entry and its identifier)**. The Type II cache is then unlocked at step 126 to end the processing.

(*Byrne*, Col. 9, Lines 32-64 (emphasis added); *see also Byrne*, Fig. 9; *see also Byrne*, Col. 10, Lines 1-28 (depicting what the Type I and Type II caches look like before and after a database entry is modified)).

That is, *Byrne* discloses that when an **add operation occurs**, the modified unit is **removed** from the Type I and Type II caches. As a result, *Byrne* fails to disclose, teach or suggest “determining whether an instruction or operation adds an information entry to or removes the information entry from a database system, wherein **for an add entry operation**, the information entry is first **added** to an ‘out’ table, and wherein for a remove entry operation, the information entry is first removed from an ‘in’ table, the ‘out’ table being non-visible to a search of the ‘in’ table” of amended independent Claim 1 (emphasis added).

Furthermore, although the Examiner concedes that *Bachmann* “explicitly does not teach the in and out tables” of independent Claim 1, the Examiner contends that a parent table and a child table of *Bachmann* are analogous to “using two tables of in and out.” (Office Action, Page 5.) Whether or not this is correct for a prior version of independent Claim 1, *Bachmann*, even when combined with *Byrne* as proposed by the Examiner, fails to disclose, teach, or suggest “determining whether an instruction or operation adds an information entry to or removes the information entry from a database system, wherein for an add entry operation, the information entry is first added to an ‘out’ table, and wherein for a remove entry operation, the information entry is first removed from an ‘in’ table, **the ‘out’ table being non-visible to a search of the ‘in’ table**” of amended independent Claim 1 (emphasis added).

Consequently, the *Bachmann-Byrne* combination proposed by the Examiner fails to disclose, teach, or suggest the elements of amended independent Claim 1. For at least these reasons, independent Claim 1, as amended, and its dependent claims are allowable under 35 U.S.C. § 103. For analogous reasons, independent Claim 11, as amended, and its dependent claims are allowable under 35 U.S.C. § 103. Accordingly, Applicant respectfully requests reconsideration and allowance of Claims 1-5, and 11-12.

New Claims

Applicant has added dependent Claims 15 and 16. The Specification supports these claims. *See, e.g.*, Fig. 1 and the passages at Page 3, Lines 27-29, and Page 5, Lines 10-13.

CONCLUSION

Applicant has made an earnest attempt to place this case in condition for allowance. For at least the foregoing reasons, Applicant respectfully requests full allowance of all the pending claims.

If the Examiner believes a telephone conference would advance prosecution of this case in any way, the Examiner is invited to contact Keiko Ichiye, the Attorney for Applicant, at the Examiner's convenience at (214) 953-6494.

No fee is believed to be due at this time. However, the Commissioner is hereby authorized to charge any additional fees or credit any overpayments presently due to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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